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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,615	10/24/2003	Do Hoon Kim	P-0605	7210

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EXAMINER

JACKSON, BLANE J

ART UNIT PAPER NUMBER

2618

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,615

Applicant(s)

KIM, DO HOON

Examiner

Blane J. Jackson

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-5, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Kopmeiners et al. (US 5,917,865).

As to claims 1 and 5, Kopmeiners teaches an automatic gain control apparatus and method of a radio frequency communication system comprising:

Extracting a maximum absolute value of a reception signal received by a receiver of a radio frequency communication system (figure 1, column 4, lines 1-47, RF receiver (100) comprising a peak detector (132) detects the peak signal level during a sampling interval using a peak hold function),

Determining a gain control value of the reception signal on the basis of the maximum absolute value and a predetermined threshold (column 4, lines 48-60, analyzer (134) including processor (135) examines the output of the peak detector (132) and adjusts gain control (136) and

Controlling gain of the reception signal according to the determined gain control value (column 6, lines 10-23, processor (135) calculates any gain adjustment to provide a control signal that adjusts the gain of VGA (110)).

As to claims 3 and 8 with respect to claims 1 and 5, Kopmeiners teaches the step of controlling the gain comprises:

Amplifying the reception signal by multiplying the reception signal by the determined gain control value and outputting the amplified reception signal (figure 1, column 4, lines 1-30, an AGC circuit (130) provides control of the VGA (110) to amplify the signal to be compatible to the input of ADC (120)).

As to claims 4 and 9 with respect to claims 1 and 5, Kopmeiners the gain control value is for amplifying the reception signal to make the extracted maximum absolute value consist with the predetermined threshold and the predetermined threshold is a maximum value of a predetermined reception signal (column 5, lines 9-25, the AGC search algorithm works to generate the gain control signal of VGA (110) to approximately the target peak level, a threshold control value).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 6, 7 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopmeiners et al. (US 5,917,865) in view of Wilson (US 5,471,651).

As to claim 2 with respect to claim 1 and claims 6 and 7 with respect to claim 5, Kopmeiners teaches the step of extracting the maximum absolute value by detecting the peak signal level of the reception signal during a sampling interval using a peak hold function, column 4, lines 31-47, but does not teach storing absolute values of the reception signal and extracting the maximum absolute value among the stored absolute values.

Wilson teaches a wireless transceiver comprising essentially an audio automatic gain control system (AGC), figures 3-5, the AGC with the method of storing absolute signal values in store (10), a serial type memory storage, and a peak envelop detector (12) to perform a window scan of the stored absolute signal values to find the first peak envelope with respect to a predetermined upper limit, record the location of this point in time and uses this result to determine what adjustment should be made to the signal gain, column 6, lines 30-59.

Despite Wilson teaching an AGC adapted at the audio portion of a wireless transceiver, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the peak and hold function during the sampling period of Kopmeiners with the sample, store and peak detect approach of Wilson to ensure the signal has been adjusted to a predetermined level when the peak arrives at the circuit output to maintain the signal input dynamic range and a constant output signal level for compatibility of subsequent circuit stages.

As to claim 10, Kopmeiners teaches an automatic gain control apparatus of a radio frequency communication system comprises:

An amplitude controller for calculating absolute values of a reception signal received by a receiver of a radio frequency communication system (figure 1, column 4, lines 1-60, peak detector (132) detects the peak signal level during a sampling interval using a peak hold function),

A controller for extracting a maximum absolute value among the absolute values *presented in an interval* and determining a gain control value of the reception signal by comparing the extracted maximum absolute value with a predetermined threshold (figure 1, column 4, lines 48-60, analyzer (134) examines the peak signal measured by peak detector and adjusts gain control (136) in accordance to an algorithm processed in processor (135)), and

A multiplier for amplifying the reception signal by multiplying the reception signal by the determined gain control value and outputting the amplified reception signal (figure 1, column 4, lines 10-18, VGA (110)).

Kopmeiners teaches extracting the maximum absolute value by detecting the peak signal level of the reception signal during a sampling interval using a peak hold function, column 4, lines 31-47, but does not teach a buffer for storing absolute values of the reception signal and extracting a maximum absolute values stored at the buffer.

Wilson teaches a wireless transceiver comprising essentially an audio automatic gain control system (AGC), figures 3-5, the AGC with the method of storing absolute

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signal values in store (10), a serial type memory storage, and a peak envelop detector (12) to perform a window scan of the stored absolute signal values to find the peak envelope with respect to a predetermined upper limit, record the location of this point in time and to utilize this result to determine what adjustment should be made to the signal gain, column 6, lines 30-59.

Despite Wilson teaching an AGC adapted at the audio portion of a wireless transceiver, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the peak and hold function during the sampling period of Kopmeiners with the sample, store and peak detect approach of Wilson to ensure the signal has been adjusted to a predetermined level when the peak arrives at the circuit output to maintain the signal input dynamic range and a constant output signal level for compatibility of subsequent circuit stages.

As to claim 11, Wilson of Kopmeiners modified teaches the apparatus of claim 10 wherein the buffer is a first in first out storage (column 6, lines 40-41, "as each block is read in, the existing blocks are shuffled through the store with some being lost at its end" where the store (10) in this context is understood to mean a serial FIFO memory device).

As to claim 12, Kopmeiners teaches the apparatus of claim 10 wherein the gain control value is for amplifying the reception signal to make the extracted maximum absolute value consist with the predetermined threshold and the predetermined

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threshold is a maximum value of a predetermined reception signal (column 5, lines 9-25, the AGC search algorithm works to generate the gain control signal of VGA (110) to approximately the target peak level, a threshold control value).

Conclusion

The prior art made of record and not relied upon but considered pertinent to applicant's disclosure includes: Miyo (US 4,656,630), Cai et al. (US 5,267,272), Zamat (US 6,314,278), Darabi (US 7,013,117), Iwata et al (US 2003/0143968) and Niki (US 4,620,147).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blane J. Jackson whose telephone number is (571) 272-7890. The examiner can normally be reached on Monday through Friday, 9:00 AM-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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